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I.—*Descriptions of New Species of Mollusca of the genera Helix and Glessula from the Khasi Hills and Manipur.*—By Major H. H. GODWIN-AUSTEN, F. R. G. S., F. Z. S., &c.—Deputy Supt. Topgl. Survey of India.

(Received Sept. ;—Read Nov. 4th, 1874.)

(With Plate I.)

The following shells were obtained in the above hills between the years 1868 and 1873, when I was employed in the survey of that tract of country ; the work afforded opportunities of visiting almost every part and of bringing together a very large collection of the land and freshwater shells, a complete list of which I hope some day to draw up.

HELIX DELIBRATA, Bs., var. FASCIATA, Plate I, Fig. 1.

Shell openly umbilicated, depressedly globose, rather solid, pale ochraceous epidermis ; spire slightly raised, in some specimens quite flat, very prettily striped with brown concentric bands, one or two of which are broader and more pronounced than the rest, especially on the base of shell ; some specimens are ornamented with a single band only, last whorl expanding towards aperture and slightly descending ; aperture sub-oblique, circular, peristome thick, white, and reflected.

Major diam. 0·82, minor 0·67, alt. 0·38 in.

Hab.—On the high open grassy country of the West Khasi Hills.

True *delibrata*, Bs. unbanded, with flat spire, and a larger shell, is also found in the Khasi Hills.

HELIX (NANINA) ATRICOLOR, n. sp., Plate I, Fig. 2.

Shell imperforate, depressedly conoid, very strong, colour varying from rich bright brown to greenish ochre, pure brown or ochre near aperture, with a glassy surface finely striated; spire flatly conoid, whorls $6\frac{1}{2}$, periphery rounded, flat at base; aperture sub-oblique, broadly lunate, peristome well thickened and slightly reflected near the columella.

Major diam. 0·93, minor 0·85, alt. 0·45 in.

Animal quite black throughout, tentacles long with the extremities paler, extremity of foot short and glandular, as in *Nanina decussata*, Bs.

Hab.—On the higher parts of the North Cachar Hills, never seen to the westward of that portion of the range, and tolerably abundant in certain spots. The colour of the animal is its most distinctive character, shells of this group of *Helices* being very similar, and the characters of the animals of great importance; I may mention as an instance *N. petrosa*, Hutton, found in damp ravines on limestone at Mussoorie, which has been confounded with other species and the animal of which is almost black; by this character it is identified at once and is rendered a very good species.

HELIX (NANINA) SHISHA, n. sp., Plate I, Fig. 3.

Shell depressedly turbinata, imperforate, exceedingly thin, brittle, transparent, pale greenish horny, sharply keeled; whorls 5, ornamented above with fine and even ribbing, quite smooth at base; aperture oblique, semicircular, lip thin.

Major diam. 0·6, minor 0·51, alt. 0·3 in.

Hab.—Two specimens were found, the one at Moyong, north side of the Khasi Hills, and the other at Nenglo, Naga Hills, in damp forest, but such a fragile form would be probably abundant during the rainy season, and like so many others only then to be seen.

Animal not seen, but in all probability is naninoid. In the plication of the upper surface it is like *N. plicatula*, W. Blf. (J. A. S. B., 1870, Vol. XXIX.) a species the animal of which had not been observed at the time when the shell was described. I now give a short description of it:—pale brown, mottled very evenly with umber over the head and sides, a distinct line of darker colour down the centre of back; tentacles rather thick at base, moderately long gland at extremity of foot, which is rather truncate; length 1·25 inch.

GLESSULA ORTHOCERAS, n. sp., Plate I, Fig. 4.

Shell very slender and elongate, pale grey or white, very finely and regularly ribbed throughout, very solid, apex blunt; whorls 13 to 14, slightly rounded, suture well impressed; aperture oblique, rounded below, outer lip sharply edged and continued as a well developed callus upon the strong thickened columellar margin.

Length 2·32, major diam. 0·4 in.

Hab.—Abundant on the nummulitic limestone of the West Khasi Hills, particularly near Nongumlai, where the finest specimens were collected; a smaller variety occurred on the peak of Laudomodo on gneiss, and was not so solid. This species can be at once distinguished from *G. Casiaca*, Bs. by its white colour and by the absence of the dark brown epidermis that covers the latter; the whorls also are much more rounded, whereas in *Casiaca* they are nearly flat. It is very close to *G. obtusa*, W. Blf., brought from Yunan by Dr. J. Anderson, but is altogether a larger shell and differs in its general form.

Fine *Glessula Casiaca*, I only found to the eastward in the Naga Hills, whence, I suspect, Griffith's specimens were obtained and sent to Benson, who imagined they were from the Khasi Hills.

GLESSULA ILLUSTRIS, n. sp., Plate I, Fig. 5.

Figured in 'Conchologia Indica', Pl. 102, Fig. 9.

Shell elongately oval, greenish horny, finely striated longitudinally; whorls 7, very slightly rounded, suture moderately impressed, the lip thickened, columellar margin slightly curved and strong, apex blunt.

Length 0·75, major diam. 0·3, length of aperture 0·3 in.

Hab.—Hengdan Peak, North Cachar Hills, at 7000 feet, in forest, also near Nenglo at 6000 feet and in the Lukah Valley, Jaintia Hills, at 1000 feet.

This species is an elongate and larger form of *Glessula crassilabris*, Bs., of which *G. pyramis* is a closer variety; but its much more elongate form and stronger striation make it a good connecting species with *G. Butleri* described further on. The form from the Lukah Valley is a tumid departure from the type figured.

One specimen—alt. 0·75, major diam. 0·38 in.

Another „ „ 0·65 „ 0·35 „

I look on all these species as properly varieties, and *G. crassilabris*, very abundant in all the grass country of the Khasi Hills, may be taken as the type; a difference in elevation and condition of habitat, from damp dark forest to hot grassy slopes, having produced modifications of form.

GLESSULA BURRAILENSIS, n. sp., Plate I, Fig. 6.

Shell turreted, elongate, solid, in fresh state brown and lustrous, finely longitudinally striated; whorls 10, rather flat, suture shallow, apex blunt; aperture sub-vertical, fusiform, angular above, peristome very thick, paler brown on margin, columella strong.

Alt. 1·37, major diam. 0·4 in.

Hab.—The finest specimens were collected under the Peak of Khunho, Eastern Burreil Range; they were also abundant under Japvo at about 7000 feet.

This species is an extremely elongate, solid form of the *crassilabris* section of *Glessula*—and one of the most distinct.

GLESSULA BUTLERI, n. sp., Plate I, Fig. 7.

Shell elongately turreted, very thin and brittle, tumid, pale corneous, glassy, very minutely striated, apex very blunt; whorls 8, rather rounded, suture deep, body whorl much swollen and capacious; aperture vertical, pear-shaped, lip rather thin.

Alt. 1·13, major diam. 0·45 in.

Hab.—Eastern Burraill Range at 6000 feet—not a common form.

I name this shell after Captain J. Butler, Political Agent in the Nágá Hills, with whom I had the pleasure of being associated when mapping that very interesting and beautiful district.

EXPLANATION OF PLATE I.

- Fig. 1. *Helix delibrata*, var. *fasciata*.
 „ 2. *H. (Nanina) atricolor*.
 „ 3. „ „ *Shisha*.
 „ 4. *Glessula orthoceras*.
 „ 5. „ *illustris*.
 „ 6. „ *Burraillensis*.
 „ 7. „ *Butleri*.

II.—*Descriptions of four New Species of Mollusca belonging to the family Zonitidæ from the N. E. Frontier of Bengal, with drawings of Helicarion gigas, Benson and of a variety of the same.*—By Major H. H. GODWIN-AUSTEN, F. R. G. S., F. Z. S., &c., Deputy Superintendent of the Topographical Survey of India.

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(With Plates II—III.)

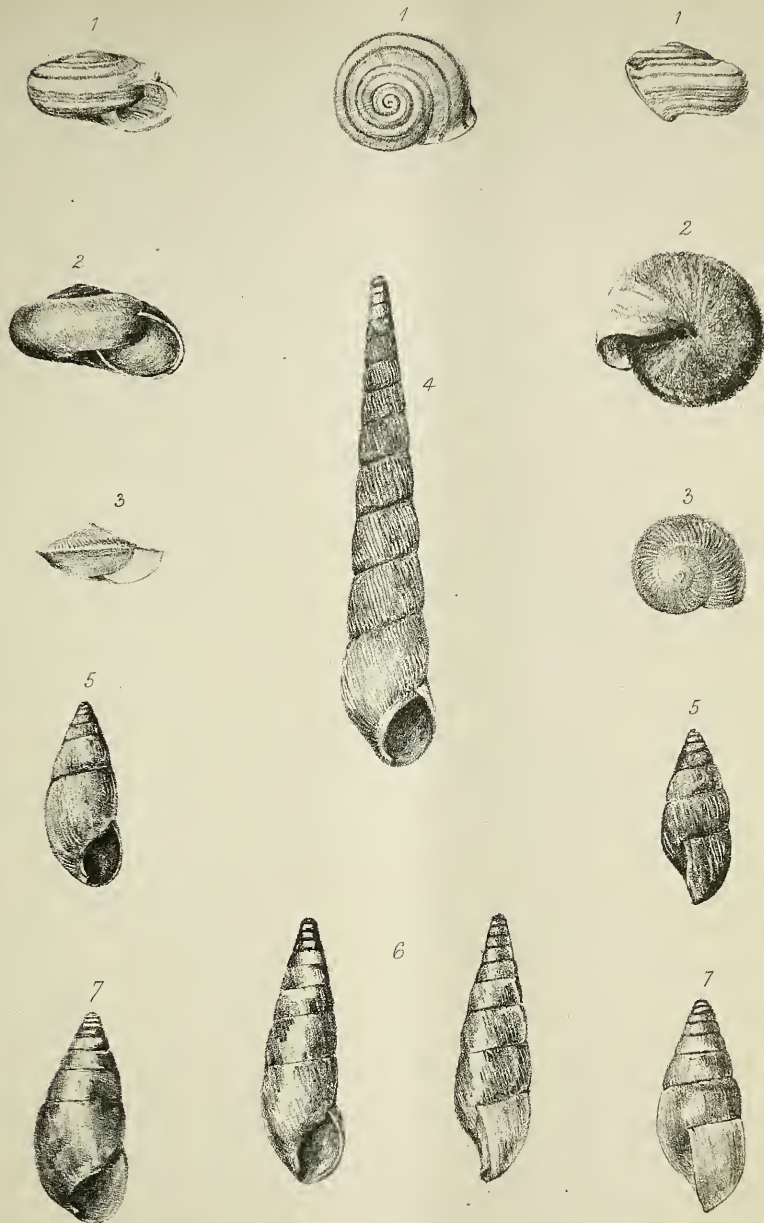
HELICARION SHILLONGENSE, n. sp.

Animal ochre colour, the mantle being slightly paler than the rest of the body, there is no longitudinal streaking on the side of the foot, which, viewed under a lens, is covered with minute protuberances evenly distributed; foot beneath dull ochre brown.

Shell horny, thin, long and narrow, pale green in colour. (Plate II, Fig. 1a).

Length 0·9", diam. 0·28."

The dimensions of these creatures are not so easily taken, the different parts expanding and contracting alternately.



Godwin Austen del.

SPECIES
OF
HELICIDÆ,
N. E. FRONTIER, BENGAL.

Maclure & Macdonald Lith.